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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

BOARD OF REGISTRATION IN OPTOMETRY

FOR THE

YEAR ENDING NOVEMBER 30, 1925

DIVISION OF REGISTRATION
DEPARTMENT OF CIVIL SERVICE AND REGISTRATION

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The Commonwealth of Massachusetts

REPORT

BOARD OF REGISTRATION IN OPTOMETRY,
STATE HOUSE, BOSTON, MASS., December 29,1925.

To WILLIAM F. CRAIG, *Director of Registration.*

Sir:—The Board of Registration in Optometry has the honor to submit to you its fourteenth annual report, as required by Section 67, Chapter 112 General Laws.

The Board has held during the year, two examinations; in June and November. The total number of candidates examined was 59. Of this number 25 passed and 34 failed.

The following written examination was given June 23, 24, 25:—

ANATOMY — PHYSIOLOGY — PATHOLOGY

Answer three questions from each section and one more from either section to make ten in all.

ANATOMY

1. Name and describe the five layers of the Iris.
2. Give as completely as possible the blood and nerve supply of the uvea.
3. Name the extrinsic muscles and give definitely the nerve supply of each.
4. Make scheratic drawing of visual and pupillary nerve paths. Locate Optic Chiasm, Ciliary Ganglion, Primary Optic Ganglion, Optic Radiations.

PHYSIOLOGY

1. Give the functions of the following: Schlemn's Canal, Hyoloid Canal, Choroid, Sclerotic and Hyoloid Membrane.
2. Why must there be perfect transparency of the retina and absence of vessels in the region of the macula?
3. What are the functions of eyelids? Discuss fully.
4. Tell what you know of the relations of the fluorescence of the rods in the retina to the visual purple.

PATHOLOGY

1. Discuss fully the venous and arterial pulse. Explain reasons for each and which is regarded as always pathological.
2. Describe ophthalmoscopic appearance of fundus in the following conditions: (*a*) Arteriosclerosis (*b*) Diabetes (*c*) Nephritis.
3. What etiological conclusions can be drawn from the Ophthalmoscopic picture of an Optic Neuritis?
4. Discuss Glaucoma, giving causes and both subjective and objective symptoms.

H. C. DOANE.

June, 1925.

PRACTICAL OPTOMETRY

GEORGE S. HOUGHTON

Answer ten of the following questions.

1. Give in complete detail your method of procedure in making an examination of the Eyes, and give your reasons for the order in which you use the various instruments and methods.

2. Patient 60 years of age, paper hanger, comes for examination; History, dizziness; working at 20 inches with plane mirror by the usual static method, it required a + 2.00 D Sphere to cause reversal at 16 inches; by the Dynamic method a + 4.75 D Sphere, Right Eye adduction 8° abduction 2° superduction 0, subduction 3°, muscle of left eye normal. What would be your correction for constant use? Explain fully.

3. How many diopters of accommodation are required for an Emmetropic Eye to see clearly an object at 20 feet?

4. Patient 40 years of age, housewife, comes for examination; History, frontal and occipital headaches, 3 months since having meager operation; general condition good. With plane mirror by the usual static method + 2.50 = —.50 Cyl. axis 180 is required O.U. by the Dynamic method at 16 inches + 3.75 = — .50 Cyl. axis 180 O.U. 8° Esophoria at 20 feet, using the maddox rod, 3° Exophoria at 14 inches using a 6° prism base up over the left Eye. Discuss fully how you would handle the case and give correction for constant use.

5. (*a*) What sense alone dominates every independent action of the extrinsic muscles?

(*b*) Under what conditions does this sense refuse to function? Discuss fully.

6. Discuss fully when a full correction for hypermetropia is suggested and under what circumstances is it reduced?

7. (*a*) Describe four methods of testing for astigmatism.

(*b*) Name and describe four methods of testing the muscles at 16 inches.

(*c*) Why is the maddox rod test unreliable?

8. Discuss fully the direct and indirect methods of using the Ophthalmoscope, explaining in detail the value of each in Optometric practice.

9. Patient, 25 years of age, bookkeeper, comes for examination; History, work blurs at times; requires for a correction + 2.00 D Sphere O.U. Right Eye adduction 24°, abduction 6°, subduction 1/2°, superduction 3°. Discuss your reasons for his trouble and give correction for constant use.

10. (*a*) Discuss your procedure in making a Monocular test of the lateral and vertical balance of the muscles of the Right Eye.

(*b*) If a prism correction is suggested, on which eye would you place it?

(*c*) How do you proceed to find the independent power of each of the Recti muscles?

11. Patient 30 years of age, Engraver, requires + 2.50 D Sphere O.U. has 8° Esophoria at 20 feet and 18° Exophoria at 14 inches. What correction would you give for constant use? Discuss your reasons.

12. (*a*) Explain how you measure the amplitude of accommodation, giving two examples.

(*b*) Discuss each of two ways you can find the amplitude of convergence.

Practical Optics

M. J. Fowler

1. (*a*) Rx. calls for a + .50 sphere combined with a 2 dioptre prism base out. How would you find out if the lens was correctly ground, if it were delivered to you all mounted?

(*b*) What is the rule of decentration of lenses?

2. (*a*) State your procedure in grinding and mounting a pair of toric kryptoks in a rimless mounting.

(*b*) Describe four double vision lenses and how each is made.

3. (*a*) The lower edge of a spectacle bridge cuts the nose; how would you remedy it?

(*b*) Give the letters signifying the length of the shank of the bridge you would give to a person with a prominent nose and deep set eyes; also to a person with a flat nose and prominent eyes.

4. (*a*) By mistake a wafer is cemented to the cylinder side of a flat lens. What happens to the power of the reading portion of the lens?

(*b*) A patient drops an oval flat lens from his nose glass and puts it back with the cylinder on the wrong side. What change is there in the effect of the lens?

(*c*) How would you find the focus of a sphere in three ways?

5. (*a*) What causes a rainbow in a cement bifocal?

(*b*) Are cemented wafers ever put on the outside of a lens? Why?

(*c*) When mounting a lens which side goes nearest the eye? Why?

6. The centers of each lens of a pair of + 6. spheres are two M.M. out from the centers of the pupils. They are in a gold filled frame. Would you grind new lenses and decenter?

7. (*a*) Rx. calls of — .50 = — .50 × 180 add + 2. for near. How would you surface and polish same if it were a cement bifocal?

(*b*) How would you decenter a + 3. combined with a + 2. × 90 so as to get a 1.50 dioptre prism?

8. (*a*) How is Crookes A glass distinguished from ordinary optical lenses?

(*b*) How is a pebble lens different from an ordinary optical lens?

9. (*a*) What is the base curve of a toric lens?

(*b*) Why is a toric better than a flat lens?

(*c*) What is the advantage of a lenticular lens?

10. (*a*) The right lens of a finger piece mounting sets too high on patient's face. How would you lower it?

(*b*) How do you use an axometer?

(*c*) How do you use a protractor?

Theoretic Optics

W. I. Brown

Answer ten of the following twelve questions.

1. The refracting angle of a prism is 2° 30′.
The index of refraction is 1.5.
Find the power.

2. Two prisms designated A and B of 5 prisms dioptre power are superimposed with their base apex lines A axis 35 B axis 155.

What single prism power would equal the above combination and at what axis would its base apex line lie?

3. If the resolving power of an eye should be ½ mm. of arc at what distance can a black object 30 cm. in diameter be seen on a white background properly illuminated? Answer in cm.

4. Give formula for determining number of images formed when two plane mirrors are mutually inclined; and explain.

5. A cx and cc lens each of 25 c.m. focal length are placed coaxially 7.5 cm. apart. Find the position of the image. (state in cm.) (*a*) If the object is 37.5 cm. beyond the cx lens. (*b*) If the object is 37.5 cm. beyond the cc. lens.

6. If a crystalline lens was removed from a normal eye where would the second focal point be located?

7. What are actinic rays and where found in spectrum?

8. Explain how to arrange two cx lenses of 23 inches and 1 inch local length respectively to form a telescope. Draw diagram showing passage of pencil of rays, coming from infinity, through the telescope.

9. What rays can be said to cause light only and where located in the spectrum?

10. What is the wave theory of light?

11. Show by geometrical construction where the focal point of a spherical mirror lies.

12. How far from a cc. mirror that has a focal length of 45 cm. must an object be placed in order to have the image inverted and three times as large as the object?

Theoretic Optometry

S. W. Baker

Answer ten questions only.

1. How would you determine and differentiate between presbyopia and accommodative asthenia?

2. Discuss three kinds of asthenopia.

3. What is the object of Ocular Calisthenics?

4. Strabismus, (*a*) do both eyes deviate? (*b*) is diplopia present (*c*) is

the false image seen in the same direction as eye deviates; (*d*) can it be corrected with prisms; (*e*) is it caused by fright, convulsions or mental impressions.

5. The Amblyscope, its construction and utility.

6. Discuss the version test, version anomalies and version exercises.

7. Name two methods to stimulate ocular muscles and describe each.

8. Ophthalmoscope, indirect method, using + 13 objective lens, patient is 4.D. hyperopic. How much accommodation would you use working at 12" away to get a clear view of the fundus?

9. Discuss cross-cylinder test in Myopia, Hyperopia and Presbyopia.

10. Discuss methods in making static and dynamic skiametry test using plane and concave mirrors.

11. On what four conditions does visual acuity depend?

12. Discuss the use of the transilluminator.

The examinations as in previous years have occupied four days, the first three being devoted to written examinations on theoretic, technical and practical subjects, while the fourth is devoted to practical demonstration of the use of instruments and methods used in the practice of optometry. In the quality and scope of the written examination the Board has during the year maintained very high standards. The practical demonstration required of the applicant has been more comprehensive than in former years. The Board maintains that before issuing a certificate of registration an applicant must demonstrate a practical understanding of the methods, and proficiency in technique with the instruments used. The applicant is therefore required to make a complete routine examination of a subject's eyes, write a prescription, demonstrate his ability to properly adjust eyeglasses and spectacle frames and to analyze and neutralize ophthalmic lenses.

All applicants are required to attain the grade of 70 percent as a passing mark in each subject. Those failing in two subjects only are required to take those subjects again at a subsequent examination. Those failing in more than two subjects are required to take the entire examination over again.

The Board, with the efficient aid of the Department of Public Safety had investigated numerous reports of violations of the optometry law. No prosecutions have been necessary, but several cases of questionable practice have been effectually stopped.

The Board is strongly of the opinion that certain changes in the law should be made and respectfully submit in this report the following recommendations:

Recommendations

Educational Standards

Owing to the fact that the educational standards for the profession of optometry have been raised to a higher plane throughout the States, and the fact that the examinations given by this Board are of such a high order from a technical as well as practical standpoint, we find that applicants who are not graduates of recognized optometry schools find it difficult to pass the examinations, and that the sentiment prevailing throughout the country is that all registered optometrists should be graduates of recognized optometry schools, this Board recommends that section 68, chapter 112 of the General Laws be amended so as to make it necessary for all applicants for examination and registration to be graduates of an approved high school and an approved optometry school. The law as it now stands permits a person to secure a student certificate, which permits him to study with a registered optometrist for a period of three years or longer, when he is then eligible to take the examination given by this Board.

This proposed amendment will tend to raise the educational standards and secure higher standards of proficiency for those entering the practice of optometry and be a further protection to the public against incompetency.

There is no provision in the law at present for an established fee to be charged for examination and registration. We therefore recommend that this be incorporated in section 68, chapter 112 of the General Laws.

Reciprocity.

The law now embodies a provision for reciprocity, registering, without examination, optometrists who have passed the required examination in other States whose educational standards are equal to those in this State.

In order to safeguard the public and insure competency on the part of optometrists registered in this manner, we recommend that the law be amended so as to require three years' actual practice in some other State before granting a certificate of registration.

House to House Canvassing.

There have been many complaints registered with this Board against the prevailing practice of optometrists canvassing and soliciting from house to house as itinerant optometrists. In the opinion of the Board these complaints are justified, as such practice tends to lower the standards of the profession and allows a greater opportunity for the practice of fraud, misrepresentation and deceit.

We therefore recommend that section 70, chapter 112 of the General Laws be amended, making it unlawful to canvass or solicit from house to house as itinerant optometrists.

Certificates to be Returned.

In order to make it less possible for one other than the rightful holder of a certificate of registration, to practice optometry, it is desirable that all certificates that have been revoked should be returned to the Board.

Sale of Glasses as Merchandise.

Many complaints come to the Board of the selling of eyeglasses as merchandise without examination. Great injury is done many persons in this practice and we strongly recommend that the clause in Section 73 which permits the sale of merchandise from permanently located and established places of business except on prescription of Physicians or Surgeons, or from Optometrists be eliminated so that all persons dispensing eyeglasses, spectacles, or lenses shall be properly licensed.

In order to conduct the examination for candidates, particularly in the Practical Demonstration required, it is necessary to have proper instruments and other equipment and such equipment needs replenishment and addition from time to time. We therefore recommend that the annual license fee be increased from two dollars to five dollars which will furnish sufficient funds to cover additional expenses.

These proposed amendments will tend to raise the educational standards and secure higher standards of proficiency for those entering the practice of Optometry, and be a further protection to the public against incompetency.

The Board respectfully asks that more commodious accommodations be provided for our records and files, the space now used being inadequate and congested.

In September, His Excellency, Governor Fuller reappointed Mr. Matthew J. Fowler of Haverhill, for a term of five years.

At the annual meeting of the Board, Mr. Howard C. Doane of Boston, was elected Chairman of the Board for the ensuing year, and Mr. George S. Houghton of Somerville, was elected Secretary for the ensuing year.

During the past year 25 men have qualified for registration by examination; 1 registered by reciprocity. Three certificates were revoked, one certificate suspended, and one Optometrist died. There is now a total of 1,004 registered optometrists in Massachusetts.

Financial Report

Receipts

Unexpended balance in hands of State Treasurer, November 30, 1924.	$1873.77
Received from applicants for examination	575.00
Received from re-examination fees	115.00
Received from certificate renewals	1,864.00
Received from Students' Certificates	4.00
Received from High School examinations	5.00
Received from Reciprocity fees	50.00
	$4486.77

Expenditures

Cash paid for compensation for commissioners	$1900.00	
Cash paid for clerical assistance	60.00	
Cash paid for carfare and general office expense	375.81	
		$2335.81
Unexpended balance in hands of State Treasurer, November 30, 1925		$2150.96

Respectfully submitted,

HOWARD C. DOANE, *Chairman.*
GEORGE S. HOUGHTON, *Secretary.*
SAMUEL W. BAKER.
WALTER I. BROWN,
MATTHEW J. FOWLER.